wherein at least one of the at least one active lasing medium comprises one or more non-homogeneously doped zones and at least one of a dimension of said doped zones and a distribution of dopants is chosen based on a desired transverse mode of the optical cavity.

17. (New) Laser according to claim 16, wherein the doped zone is positioned substantially centrally in the at least one active lasing medium, dimensions of the doped zone are adapted to a fundamental mode of the optical cavity or to the transverse mode, and at least one of a non-doped peripheral zone has dimensions adapted to the coupling means.

18. (New) Laser according to Claim 16, wherein a section of an input face of the doped zone that receives the at least one pumping beam is smaller than or equal to a section of a fundamental mode of the optical cavity.

A1 Cont'd

19. (New) Laser according to Claims 16, wherein a section of an input face of the doped zone that receives the at least one pumping beam is at least greater than a section of a fundamental mode of the optical cavity, the optical cavity comprising a selection device.

20. (New) Laser according to Claim 16, wherein the at least one active lasing medium comprises a non-doped central zone surrounded by a doped peripheral zone.

21. (New) Laser according to Claim 16, wherein the doped zone has a parallelepiped or circular or elliptical shape.

22. (New) Laser according to Claim 16, wherein one or more of the at least one pumping means comprises one or more diode arrays and the coupling means includes a light concentrator for receiving all light emitted by the diode arrays.

23. (New) Laser according to Claim 16, wherein the coupling means comprises at least one of the devices chosen from the group consisting of: a refractive focusing system, a diffractive focusing system, a system working by reflection, and a system for reshaping an extent of a beam.

24. (New) Laser according to Claim 16, wherein the distribution of the dopants in the at least one active lasing medium is made according to a gradient.

25. (New) Laser according to Claim 16, wherein the dopants are chosen from among one or more of the ions of the group consisting of: $Nd^{3+}$, $Yb^{3+}$, $Er^{3+}$, $Ho^{3+}$, $Th^{3+}$.

26. (New) Laser according to Claim 16, wherein a face of the at least one active lasing medium facing the coupling means is treated to be anti-reflective at a pumping wavelength and reflective at a laser wavelength, and an opposite face of the active medium is treated to be anti-reflective at the laser wavelength.

27. (New) Method for the manufacture of an active medium used in lasers, comprising:

making one or more pieces of a doped matrix and a non-doped matrix to obtain an active medium including one or more zones or volumes having at least one of a dimension and a distribution of the dopants chosen to obtain a transverse mode of the laser cavity.

28. (New) Method of manufacture according to Claim 27, wherein the making is a step of joining by gluing, molecular adhesion, or diffusion bonding.

29. (New) Method of manufacture according to Claim 27, wherein the making is a step for preforming a step-index fiber or for preforming a fiber with a graded index of dopants.

30. (New) Use of the laser according to Claim 16 to amplify one or more laser beams.

IN THE ABSTRACT

Please delete the original Abstract on page 17 in its entirety and insert therefor: